

A NEW SPECIES AND A NEW RECORD OF CARIDINA (DECAPODA, ATYIDAE) FROM GUANGDONG, CHINA

GUO Zhao Liang¹, HE Shun Lian^{1*}

1. Department of Animal Science, Foshan Science and Technology College, Nanhai, 528231, Guangdong Province, China; E-mail: zlguo@fosu.edu.cn

Abstract Two species of the genus *Caridina* are described on the base of specimens collected from Guangdong Province, China. *Caridina qingyuensis*, new species is distinguished from its closely similar congeners by the shape and spination of endopod of the male first pleopod and the longer appendix interna, the spination of propodus of the third to fifth pereiopods, and the uropodal diaresis. *Caridina pingi* Yu, 1938 is reported from Guangdong Province for the first time.

Key words Atyidae, *Caridina*, new species, Guangdong, China.

1 Introduction

So far, the genus *Caridina* from Guangdong Province includes 10 species and subspecies: *Caridina apodus* Cai & Ng, 1999, *C. brevifrons* Ng & Cai, 2000, *C. antonensis* Yu, 1938, *C. huanaensis* Liang, 2004, *C. lanceifrons* Yu, 1936, *C. longirostris* H. Milne Edwards, 1837, *C. nanaensis* Cai & Ng, 1999, *C. nilotica gracilipes* De Man, 1908, *C. serrata* Stimpson, 1860, and *C. zhongshanensis* Liang, 2004 (Yu, 1938; Cai & Ng, 1999; Ng & Cai, 2000; Liang, 2004).

A small collection of the genus *Caridina* was collected from Guangdong Province. When checking this collection, we found one new species and one new record of the *Caridina*, which are described and illustrated in the present paper. The relationship between the new species and closely related species is discussed.

2 Material and Methods

Specimens were collected by hand net (mesh size 0.5 mm) and then preserved in 75% alcohol. The drawings were made with the aid of drawing tube mounted on an Olympus BX-41 compound microscope.

The following abbreviations are used throughout the text: tl, total length of body (measured from the rostral tip to the posterior margin of the telson); cl, carapace length (measured from the postorbital margin to the posterior margin of the carapace); rl, rostral length (measured from the rostral tip to the postorbital margin).

All types specimens treated in this study are deposited in the Foshan Science and Technology College (FSTC).

3 Description

Caridina qingyuensis sp. nov. (Figs. 1–19)

Material examined. Holotype, adult male (FSTC, 06-01-01), tl 16.3 mm, cl 4.3 mm, rl 1.3 mm. Baishikeng Village, Qingyuan City, Guangdong Province

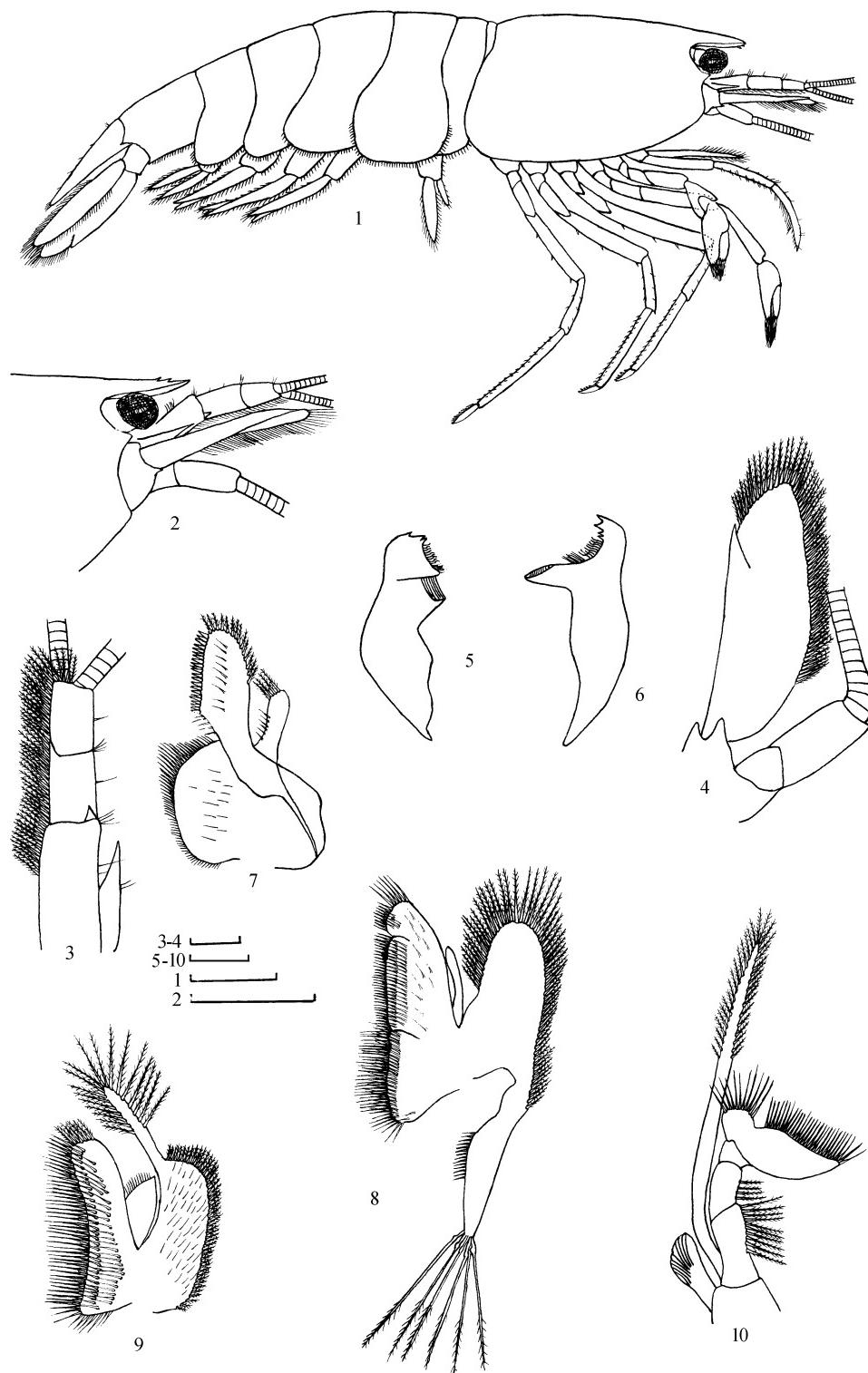
(ca. 23°35' N, 113°10' E). 3 Jan. 2006. Paratypes: 5 males (FSTC, 06-01-02 to 06), tl 17.0–19.8 mm, cl 5.3–6.1 mm, rl 1.1–1.5 mm; 4 females (FSTC, 06-01-07 to 16), tl 17.4–21.7 mm, cl 4.9–6.9 mm, rl 1.3–1.59 mm; same data as for the holotype.

Rostrum (Figs. 1–2) short, 0.2–0.30 times of cl, straight, reaching near to end of first segment of antennular peduncle, or slightly beyond it, armed with 0–3 (usually 0) dorsal teeth, and 0–2 (usually 1) ventral teeth, which closely placed at anterior portion. The antero-lateral angle of carapace without pterygostomian spine.

Antennular peduncle (Figs. 1–3) about 0.51 times of cl, stylocerite about 0.82–0.90 times as long as first segment, second segment about 0.67–0.83 times as long as basal segment, about 1.2–1.5 times as long as distal segment. Scaphocerite (Figs. 1–2, 4) about 2.7–3.0 times as long as broad.

Mandible (Figs. 5–6) without palp, right mandible with 5 strong sharp incisor teeth laterally, molar process ridged, left mandible with 4 irregularly sharp teeth. Maxillular (Fig. 7) palp simple, lower lacinia broadly rounded, upper lacinia broadly elongate, medial edge straight. Maxilla (Fig. 8) with simple palp, scaphognathite normal. First maxilliped (Fig. 9) with palp broadly triangular, ending in pointed tip, caridean lobe broad, exopodal flagellum well developed. Second maxilliped (Fig. 10) with normal endopod, ultimate and penultimate segments of endopod indistinctly divided, exopod well developed. Third maxilliped (Fig. 11) with robust endopod, length of penultimate segment about 0.85 times as long a basal segment; distal segment about 1.2 times as long as penultimate segment, ending in a large claw-like spine, exopod reaches to about half of second segment of endopod.

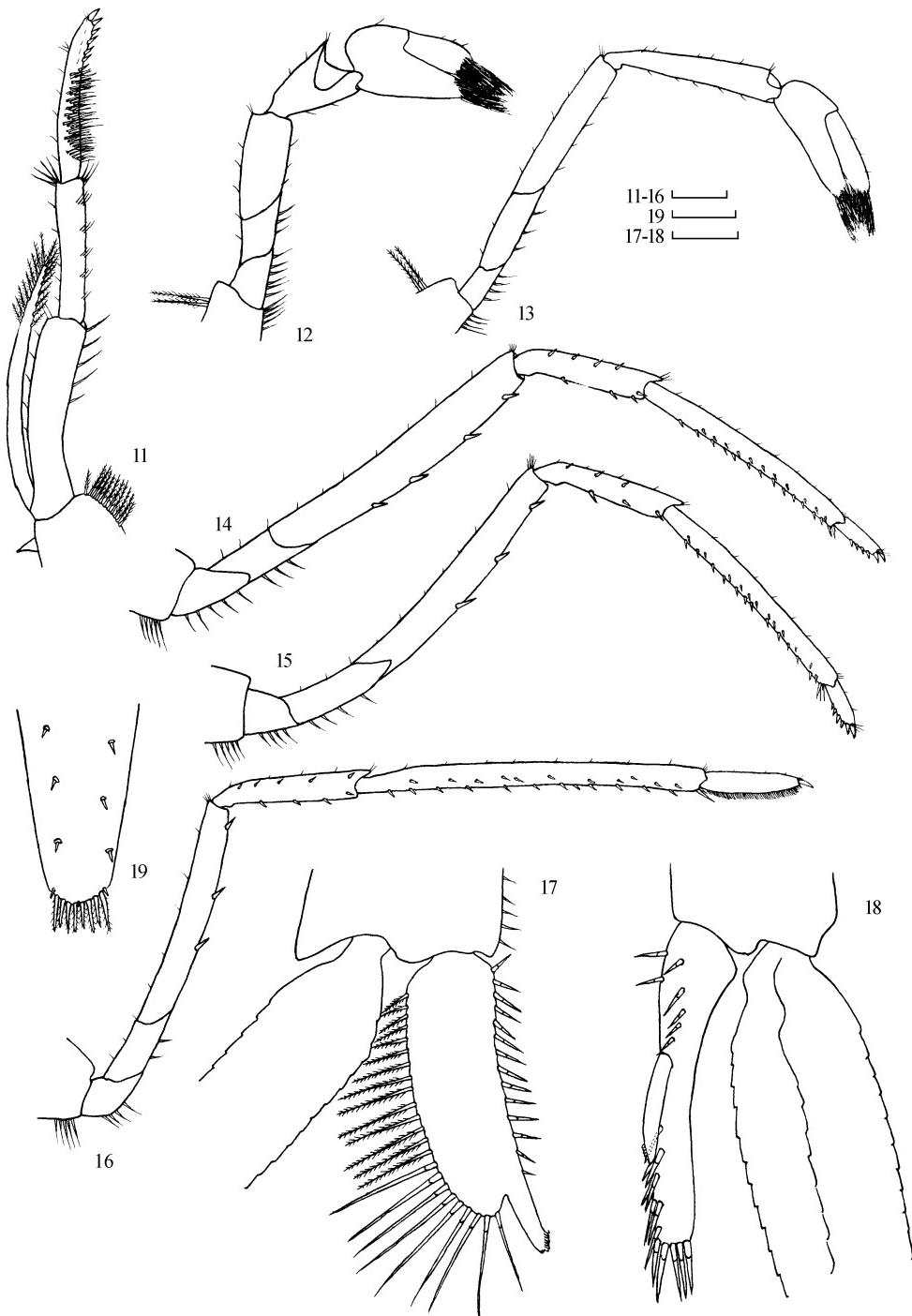
First pereiopod (Fig. 12) reaches end of eyes; chela 1.7–2.3 times as long as wide, about 1.2–1.5 times length of carpus; movable finger 0.53–1.00 times as long



Figs 1-10. *Caridina qingyuaniensis* sp. nov. 1. Entire animal in lateral view, male, cl 4.3 mm (FSTC, 06 01-01). 2. Anterior part of cephalothorax and cephalic appendages in lateral view, paratype, male, cl 6.1 mm (FSTC, 06 01-05). 3. Antennular peduncle. 4. Scaphocerite. 5. Right mandible. 6. Left mandible. 7. Maxillula. 8. Maxilla. 9. First maxilliped. 10. Second maxilliped. 3-10. Paratype, male, d 5.3 mm (FSTC, 06 01-06). Scale bars: 1, 2= 2 mm, 3-10= 0.5 mm.

as palm; carpus about 1.4-1.7 times as long as wide, about 0.77-1.20 times length of merus. Second pereiopod (Fig. 13) reaches middle of third segment of antennular peduncle; chela about 2.4-2.8 times as long

as wide, about 0.59-0.83 times length of carpus; movable finger 1.3-1.6 times as long as palm; carpus 4.7-6.1 times as long as wide, about 0.73-1.20 times as long as merus. Third pereiopod (Fig. 14) reaches end of



Figs 11-19. *Caridina qingyuensis* sp. nov., paratype, male, d 5.3 mm (FSTC, 06 01-06). 11. Third maxilliped. 12. First pereiopod. 13. Second pereiopod. 14. Third pereiopod. 15. Fourth pereiopod. 16. Fifth ereiopod. 17. Endopod of male first pleopod. 18. Appendix masculina of male second pleopod. 19. Posterior portion of telson. Scale bars: 11-16, 19= 0.5 mm; 17-18= 0.2 mm.

third segment of antennular peduncle; dactylus 3.3-4.3 times as long as wide, ending in prominent claw-like spine surrounded by simple setae, behind which bears 4-6 spines; propodus 8.8-11.8 times as long as wide, with row of marginal spinules and row of submarginal spinules on posterior margin, about 3.3-4.2 times length of dactylus; carpus 0.50-0.77 times length of propodus,

inner margin with a few spinules and outer margin with row of spinules; merus 1.6-2.1 times as long as carpus, with about 3-4 spinules on postero-lateral margin. Fourth pereiopod (Fig. 15) most similar in form with third pereiopod. Fifth pereiopod (Fig. 16) reaches end of second segment of antennular peduncle; dactylus 3.5-5.5 times as long as wide, ending in prominent claw-like

spine surrounded by simple setae, behind which bears comb-like row of 57-64 spinules on posterior margin; propodus 8.7-17.2 times as long as wide, with row of marginal spinules and row of submarginal spinules on posterior margin, about 3.1-4.5 times length of dactylus; carpus 0.45-0.58 times length of propodus, inner margin with a few spinules and outer margin with row of spinules; merus 1.3-1.6 times as long as carpus, with about 3 spinules on postero-lateral margin.

Endopod (Fig. 17) of male first pleopod extending to 0.48-0.77 times exopod length, rectangular in shape, wider proximally, about 2.7-3.0 times as long as maximal width, inner margin slightly concave and with marginal spinules, 1/4 distally of outer margin and distally with long and strong spinules, basal part of the outer border with marginal long plumose; appendix interna well developed, arising from distally, 2/3 length overreaches end of endopod. Endopod of male second pleopod (Fig. 18) about 0.87 times length of exopod; appendix masculina rod-shaped, reaching to about 0.60 times length of endopod, bearing a few long spines on proximally and two row of long spines on inner margin and distally, appendix interna arising from 1/3 proximally of appendix masculina, reaching 3/4 of appendix masculina.

Telson (Fig. 19) 0.44-0.60 times of cl, distinctly longer than sixth abdominal segment, ending in rounded margin, dorsal surface with 5-6 pairs of stout movable spines including the pair at posterolateral angles; posterior margin with 3-4 pairs of intermedial plumose setae and a small median point, lateral pair usually stouts and longest. Uropodal diaresis with 15-18 spinules.

Eggs size 0.75-0.79 mm × 1.21-1.32 mm in diameter.

Live colouration. There are variations in colouration and shape of the black and white pattern depending on mood and environment. The living shrimp has a black head, the body with very clear black and white strips and with bluish or greenish tints.

Etymology. The new species is named after known distributional range, Qingyuan City, Guangdong Province.

Remarks. *Caridina qingyuanensis*, new species most resembles *C. huinanensis* Liang, 2004 also from Guangdong Province in the shape of the rostrum, shape and structure of appendix masculina, and the large eggs. It can be distinguished from *C. huinanensis* by the shape of endopod of first male pleopod (rectangular in shape and slightly concave in inner margin versus leafy and slightly convex in *C. huinanensis*), and the appendix interna arising from distally, 2/3 length overreaches end of endopod (versus arising from distal 1/3, slightly reaching beyond distal margin of endopod in *C. huinanensis*); the propodus of third to fifth pereiopods with row of marginal spinules and row of submarginal

spinules on posterior margin (versus with only row of marginal spinules in *C. huinanensis*); and uropodal diaresis with few spinules (15-18 versus 21-24), the broader scaphocerite (2.7-3.0 times as long as wide versus 3.2 times), and the different colouration of live shrimp.

This species has striking colour pattern, now it is an important ornamental shrimp. It was sold in the Guangzhou ornamental fish market.

Habitat. The type specimens were collected from a small stream at an elevation of 300 m near Baishikeng Village, Qingyuan City, Guangdong Province (ca. 23°35'N, 113°10'E). The stream, which is about 1-2 m in width and about 0.8-1.2 m in depth, with rocky bed. The shrimps live under stones. The temperature was 16°C and pH was 7.5.

Distribution. Only known from Guangdong Province.

Caridina pingi Yu, 1938

Caridina pingi Yu, 1938: 294, figs. 9-10 [Type locality: Amoy, Fujian Province, southern China]; Liang, 2004: 276, fig. 135. *Caridina pingi pingi* Liang & Zheng, 1985: 319, figs. 1a-7a. *Caridina piji* Dai et al., 1993: 836, fig. 2

Material examined. 5 males (FSTC, 2004-07-01 to 05): cl 3.0-4.9 mm; 6 females (FSTC, 2004-07-06 to 11), cl 3.9-5.2 mm; near Shangshuai Town, Lianshan County, Guangdong Province. 14 July 2004.

Remarks. The present materials agree well with the previous description (Yu, 1938; Dai et al., 1993; Liang & Zheng, 1985; Liang, 2004). It is a common atyid shrimp in China. This is the first record of the species from Guangdong Province. It has been found in mountain streams, and usually collected together with *Caridina cantonensis* Yu, 1938, *Neocaridina palmata* (Shen, 1948) and *Maroibrachium nipponense* (De Haan, 1849).

Distribution. Fujian, Guangdong, Anhui, Hunan and Hebei Province.

Acknowledgements The authors wish to thank Prof. LIANG Xiang-Qiu of Shanghai Fisheries University for the substantial advice and encouragement. We also thank Prof. L. B. Holthuis, Dr. CAI Yi-Xiong, Dr. S. De Grave and Mr. W. Klotz for providing us with essential literature.

REFERENCES

- Cai, Y-X and Ng, N. K. 1999. A revision of the *Caridina serrata* species group, with descriptions of five new species (Crustacea: Decapoda: Caridea: Atyidae). *Journal of Natural History*, 33: 1603-1638.
- Dai, A-Y, Chen, G-X and Cai, Y-X. 1993. Malacostreca: Decapoda. Animals of Longqi Mountain. 834-843.
- Liang, X-Q. 2004. Fauna Sinica, Invertebrata, Vol. 36, Atyidae, Decapoda, Crustacea. Science Press, Beijing. pp. 1-375.
- Liang, X-Q and Zheng, M-Q. 1985. On *Caridina pingi* Yu and its two new subspecies. *Oceanologia et Limnologia Sinica*, 16(4): 316-322.
- Milne Edwards, H. 1837. *Histoire naturelle des Crustaces, Comptenant l'Anatomie, la Physiologie et la Classification de ces Animaux*, Vol. 2 (Paris: Librairie Encyclopédique de Roret). pp. 1-532.

- Ng, N. K. and Cai, Y-X 2000. Two new species of atyid shrimps from Southern China (Crustacea: Decapoda: Caridea). *The Raffles Bulletin of Zoology*, 48 (1): 167-175.
- Stimpson, W. 1860. Prodromus descriptionis animalium evertibratorum, quae in Expeditione ad Oceanum Pacificum Septentrionalem, a Republica Federata missa, C. Ringgold et J. Rodgers, observavit et

descriptis. *Proceedings of National Academy of Sciences, Philadelphia*, 8: 97-116.

- Yu, S-C 1938. Study on Chinese Caridina with descriptions of five species. *Bulletin of the Fan Memorial of the Institute of Biology, Zodology Series*, 8 (3): 271-310.

广东米虾属一新种与一新纪录种记述(十足目, 匙指虾科)

郭照良 贺顺连

佛山科学技术学院动物科学系 广东佛山 528231

摘要 报道了采自广东的十足目匙指科米虾属1新种, 清远米虾 *Caridina qingyuensis* sp. nov.。新种与近似种华南米虾的主要区别在于雄性第1附肢内肢与内附肢的形状不同, 第

3~5对步足各节上刺的着生位置与数量不同, 尾外肢横缝刺的数量少。首次报道了秉氏米虾 *Caridina pingi* Yu, 1938 在广东的分布。

关键词 匙指科, 米虾属, 新种, 广东, 中国.

中图分类号 Q959. 223. 5